



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/546,312	04/10/2000	Robert Barry Wood	99-089-TAP	3419

7590 06/17/2003

Timothy R Schulte
Storage Technology Corporation
One StorageTek Drive
MS 4309
Louisville, CO 80028-4309

EXAMINER

BATAILLE, PIERRE MICHE

ART UNIT

PAPER NUMBER

2186

DATE MAILED: 06/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/546,312	WOOD, ROBERT BARRY	
	Examiner	Art Unit Pierre-Michel Bataille	2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 10 April 2000.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-3,6,8-13,16,18 and 19 is/are rejected.
- 7) Claim(s) 4,5,7,14,15 and 17 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2 & 3</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-19 are presented in the application for examination. Acknowledge is made of the submission of Informal Disclosure Statement Submitted 04/10/2000 and 02/12/2002.

Specification

2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. The following Objection is noted:
Title: The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 6, 8-13, 16, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,324,497 (Yates et al) in view of US 6,070,224 (LeCrone et al).

With respect to claims 1 and 10, Yates discloses a tape drive emulation system that emulates a tape mounted in a tape drive, including tape library interface [TITLE; Col. 2, Lines 52-57] comprising: at least one storage appliance operative to emulate the tape drive and a plurality of tape volumes mountable in the tape drive [tape unit 20, automatic tape library (ATL), Fig. 1A; Col. 2, Lines 39-45]; and an interface manager [library management system, virtual tape server, tape library interface, magnetic tape system interface 22 or channel interface CIFs] in communication with the at least one storage appliance and in communication with a client using an interface protocol that defines a plurality of addresses [Col. 3, Lines 45-61], the interface manager (library management system) being operative to control mounting of the plurality of the virtual volumes in the tape drive to emulate the tape mounted on the tape drive [Col. 2, Lines 61 to Col. 3, Line 2; Col. 3, Lines 62-66]. Yates fails to specify the tape cartridge has a plurality of addresses at least as great in number as the plurality of addresses defined by the interface protocol. However, LeCrone discloses a method for operating a tape storage device as a virtual tape device available responsive to tape requests for input-output operations from a user computer [Col. 5, Lines 29-36], wherein the tape storage apparatus having a plurality of virtual addresses at least as great in number as the plurality of addresses defined by the interface protocol [(the emulated storage system establishing a virtual tape program address space) Col. 6, Lines 33-54; Col. 5, Lines 40-49; Col. 3, Lines 25-33]. Therefore, it would have been obvious to one having ordinary skill in the art to feature the virtual tape storage apparatus, as disclosed in LeCrone, in combination with the features of Yates because the virtual tape storage apparatus

would have maintained correspondence between virtual tape locations and magnetic tape locations [Col. 3, Lines 34-37].

With respect to claim 2, LeCrone uses a client controller in communication with the interface protocol and storage appliance controller in communication with the client, the controller operative to control mounting of the plurality of virtual volumes in tape drive for emulation of the tape cartridge in the tape drive [Col. 7, Lines 56-61].

With respect to claims 3 and 11-13, LeCrone discloses an address map in communication with the client controller and the storage appliance controller, the address map operative to map plurality of addresses defined by the interface protocol in the plurality of virtual addresses (channel adapter connecting to a host and disk adapter connecting to a plurality of disks) [Col. 4, Lines 26-39; Col. 8, Lines 40-54], identifying which tape cartridge being addressed by a client and making the tape cartridge accessible to the client at the selected address [Col. 7, Lines 47-61].

With respect to claims 6 and 16, LeCrone uses at least one storage appliance communicating with a second interface protocol, the interface manager comprising an interface protocol converter in communication between the client controller and the storage appliance controller to convert between the interface protocol and the second interface protocol [Col. 3, Lines 11-17].

With respect to claims 8-9 and 18-19, LeCrone teaches at least one storage appliance emulating the tape drive using an actual tape drive or using an actual tape cartridge [Col. 3, Lines 5-11; Col. 4, Lines 12-15].

Allowable Subject Matter

5. Claims 4-5, 7, 14-15, and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6,260,110 (LeCrone et al) teaching virtual tape system with variable size.

US 6,557,073 (Fujiwara et al) teaching storage apparatus having virtual storage area.

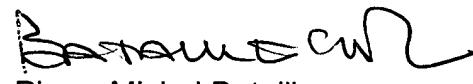
US 5,899,994 (Mahamed et al) teaching flexible translation storage for virtual address translation.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pierre-Michel Bataille whose telephone number is (703) 305-0134. The examiner can normally be reached on Tue-Fri (7:30A to 6:00P).

Art Unit: 2186

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew M. Kim can be reached on (703) 305-3821. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



Pierre-Michel Bataille
Examiner
Art Unit 2186

June 12, 2003